Title: Slippery Slope

Brief Overview:

Students will learn to calculate slope, write equations of lines and model slope through real world situation using word problems.

NCTM Content Standard/National Science Education Standard:

- Understand patterns, relations, and functions.
- Represent and analyze mathematical situations and structures using algebraic symbols.
- Use mathematical models to represent and understand quantitative relationships.
- Analyze change in various contexts.

Grade/Level:

9 – 12/Algebra I, II

Duration/Length:

Three 90–minute class periods (Five 50–minute periods)

Student Outcomes:

Students will:

- Determine slope from looking at the graphs and points on the graph.
- Be able to calculate slope given two ordered pairs.
- Graph lines given the equations.
- Write the equation of a line given two points or one point and a slope.
- Interpret the meaning of a slope in a real world situation.

Materials and Resources:

- Meter stick
- Toy car
- Different colored markers or chalk
- Colored Pencils
- Index cards
- Rope
- Graph Paper
- Worksheets
    - Cartesian Plane Battleship
    - Coordinate grid

- Racing Up and Over the Track
- Sloping it Up
- Find Someone Who
- Slope in the Real World
- Mountain Climber
- Mountain Climber Cards
- Linear Equations in the Real World
- Linear Equations Homework
- Using Point-Slope Form
- Linear Equatins Round Table

Development/Procedures:

Lesson 1

Pre-assessment – Pair off the students to play "Cartesian Plane Battleship", which will reinforce knowledge of plotting and identifying coordinate pairs. Each student will receive two Cartesian battle grounds. The students should begin by plotting out their ships using the dimensions provided on the sheets. – The ships can be placed vertically, horizontally or diagonally across consecutive whole numbers on the Cartesian plane. Have the students draw lines to represent the boats. Students will take turns asking their partner coordinate pairs. If there is a ship on the coordinate pair then that is a hit, and the student may take another turn. If there is not boat there then it is a miss, and it is the other students turn. Continue this until one student sinks the other student's ship. An alternate version of this activity is to use GeoBoards rather than paper Cartesian planes.

Launch – Using a meter stick and a toy car, create an inclined plane. Set up the inclined plane at various heights and let the car go down the plane. Use this visual to introduce the concept of slope. Ask the students, "When does the car go faster, when does it go slower?" Expect the students to answer that the car goes faster when the inclined plane is steeper. Emphasize to the students that the car goes faster when the ramp is steeper, because its slope is greater. Emphasize further that the car goes slower when the ramp is less steep, and the slope is less. Provide a copy of the "Coordinate Grid" paper and have the students draw the different inclines on a coordinate plane.

Teacher Facilitation –Introduce the concept of slope, and how to compute it using the rise over run method and two points on the line. To show the rise over run method, project

"Racing Up and Over the Track" and demonstrate how to count the slope of the line as an extension of the race track. Flip the transparency over to and associate going down the line as negative. Bring in vertical and horizontal lines, connecting to the race cars. Cars cannot go straight up a line, which can be connected to the vertical line with an undefined slope. Since a horizontal line is flat, associate the horizontal line with a slope of 0.

Develop the slope formula. Use the points on the graph from "Racing Up and Over the Track" to show them how to calculate slope using two points and the formula.

Student Application – Assign "Sloping it Up", in which the students will practice finding the slope of a line on the Cartesian plane and given two points.

Embedded Assessment – The students will play, "Find Someone Who". In this activity, the students will be given a worksheet with 6 problems on it. Students will find someone in the class that can solve the problem, and have that student do the problem, explain it to the other student and then sign off on the problem. Students will find a different person for each problem.

Reteaching/Extension –

- For those students who have a difficult time understanding slope, provide larger, simple graphs with two points on it. Stress the counting method for rise and the run.. Once they get comfortable doing that tell them to divide the rise by the run.
- For students who continue to struggle, use a color-coded slope equation. For example, make the first ordered pair red and the second blue, and then give them the slope equation as this: $y2 - y1/x2 - x1$. Now give them ordered pairs and tell them to rewrite the first ordered pair as red and the second as blue with colored pencils. Have them do this for the whole problem set. After they have done that, instruct them to go through and plug in the color coded points for all the ordered pairs, but not to do the math operation. Allow a calculator for them to complete the necessary operations to find the slope.
- For students whom have an outstanding understanding of the material, give them the "Slope in the Real World" hand–out to complete.

Lesson 2

Preassessment – Give the students graph paper and write a point and a slope on the board. Have the students plot the point on the Cartesian plane and then use the slope to find the next point. Then have the students connect the points to make the line. Put several examples like this on the board.

Launch – Have the students play the "Cliff Hanger", similar to that on Price is Right. Instead of pricing items, they will be finding *y*–intercepts and slopes given graphs of lines. Divide the class into pairs. Give each pair of students a copy of "Mountain Climber", and six "Graph Cards" answers on the back. Students decide who will be the first climber, and that student will be the first to answer questions. The climber starts at the origin. The non–climber student will show the climber a Graph Card. The student must identify the *y*–intercept and the slope of the line on the Graph Card. If the student answers correct, the climber will stay at the origin. If the student answers incorrectly, the climber moves up the line, one for each number off. For example if the correct answer for the *y*–intercept is 3 and for the slope is 2, and the student answers 5 and 3, since the *y*–intercept was off 2 and slope was off 1, the climber moves a total of 3 spots up, since the student was off by 3. The non–climber continues showing the climber graphs until the climber has answered three questions or until the climber falls of the "cliff." After either one of these scenarios happens, the two students switch roles, and play again using the remaining three cards.

Teacher Facilitation – Explain the concept of linear equations, beginning with slope–intercept form. Write on the board $y = mx + b$. Tell the students that the co–efficient in the front of the *x*, (*m*), represents the slope, and the letter *b* represents the *y* – intercept. Put some equations on the board and ask the students to pick out the slope and the *y*–intercept.

Transition into having the students graph equations in slope–intercept form. Write the equation for slope–intercept form on the board, but without the *m* or the *b*: $y = \_\_x + \_\_$. Distribute graph paper for the students to graph the model problems.

Prior to the start of class, write different values for slope on ten index cards, and different values for *y*-intercept on ten additional index cards. Include positive, negative, fractions, decimals, and zero in the values. Post a large coordinate plane on the board. Have a student draw a *y*-intercept card at random from the deck. Invite the student to plot the *y*–intercept on the board. Tape the index card in the space provided for the *y*–intercept on the blank equation. Select a student to pick a card from the slope deck, and guide the student in graphing the line using the plotted *y* – intercept and the slope. Tape the card with in the blank spot in from of the x in the blank equation. Connect the equation and the graphed line. Repeat the activity, having the students work as a class as well as individually until mastery is reached.

Now that the students are able to graph equations in slope–intercept form, give the students examples of problems in standard form and ask them if they know how to graph them. Show them how to change them from standard form to y–intercept form. Now from there they should be able to graph the equation.

Student Application – Complete the "Linear Equations in the Real World" worksheet. Have the students work in groups on the first problem, and then individually to complete the remainder of the sheet.

Embedded Assessment – Assign "Linear Equations" and have the students complete it for homework.

Reteaching/Extension

- Review the card drawing exercise with the students that have a difficult time understanding, providing more integer examples.

Lesson 3

Preassessment – Have students show their understanding of graphing lines given the equation, and graphing lines given a point or intercept, and the slope. Place several examples on the board or overhead.

Launch – Prior to the start of class, create a graph using the tiles of the floor and masking tape. Divide the class into pairs. Choose two students to stand on the grid as 'points', and stretch a length of rope 'line' between the two of them.

Ask the students to find the slope of their line. Have the students change points and do this several times.

Teacher Facilitation – Give the students a slope and a y – intercept and ask them if they can write an equation for the line. Now write two coordinate points on the board and ask if they can write an equation for the line. They will probably have a few ideas but not know exactly how write the equation. Introduce the point–slope form, $y - y_1 = m(x - x_1)$. Model finding the equation of a line. Project "Using Point-Slope Form", and have the students write the steps on an index card. Guide the students through several examples using two points and point-slope form to find the equation of the line. Display several graphs, and have the students write the equation of the line using two points or by finding the slope and a point. Be sure your examples include positive and negative slopes, as well as slopes that are zero and undefined.

Student Application – Have the students go through and complete several example problems by themselves using the steps.

Embedded Assessment – Play the "Round Table" game, dividing the class into groups of four. Each student will be given a different four-step problem. Everyone completes the first step of the problem, and then passes the sheet to the next person in the group. That person checks the previous person's work and does the next step. The procedure repeats until problems are done.

Reteaching/Extension

- As a re–teaching tool have the students graph the line given the two points, rather then having the students using the formulas to find the equation of the line. Now have them pick the y–intercept and the slope off the graph and plug it into $y = mx + b$. Now they have either the exact equation or a good approximation based on the how accurate their graphs are. Now find the equation of the line algebraically and compare the answers, it may be easier for them to find the correct answer with the graph and at least a good approximation in front of them
- As an extension ask the students if they can find any other way to write the equation of a line given two points. They may be able to figure different ways to do this, such as using a point and slope and $y = mx + b$ to find the y–intercept.

Summative Assessment:

Students will take county based summative assessment if available. If one is not available, create a unit quiz or test that assess' all the student outcomes laid out at the beginning of the unit.

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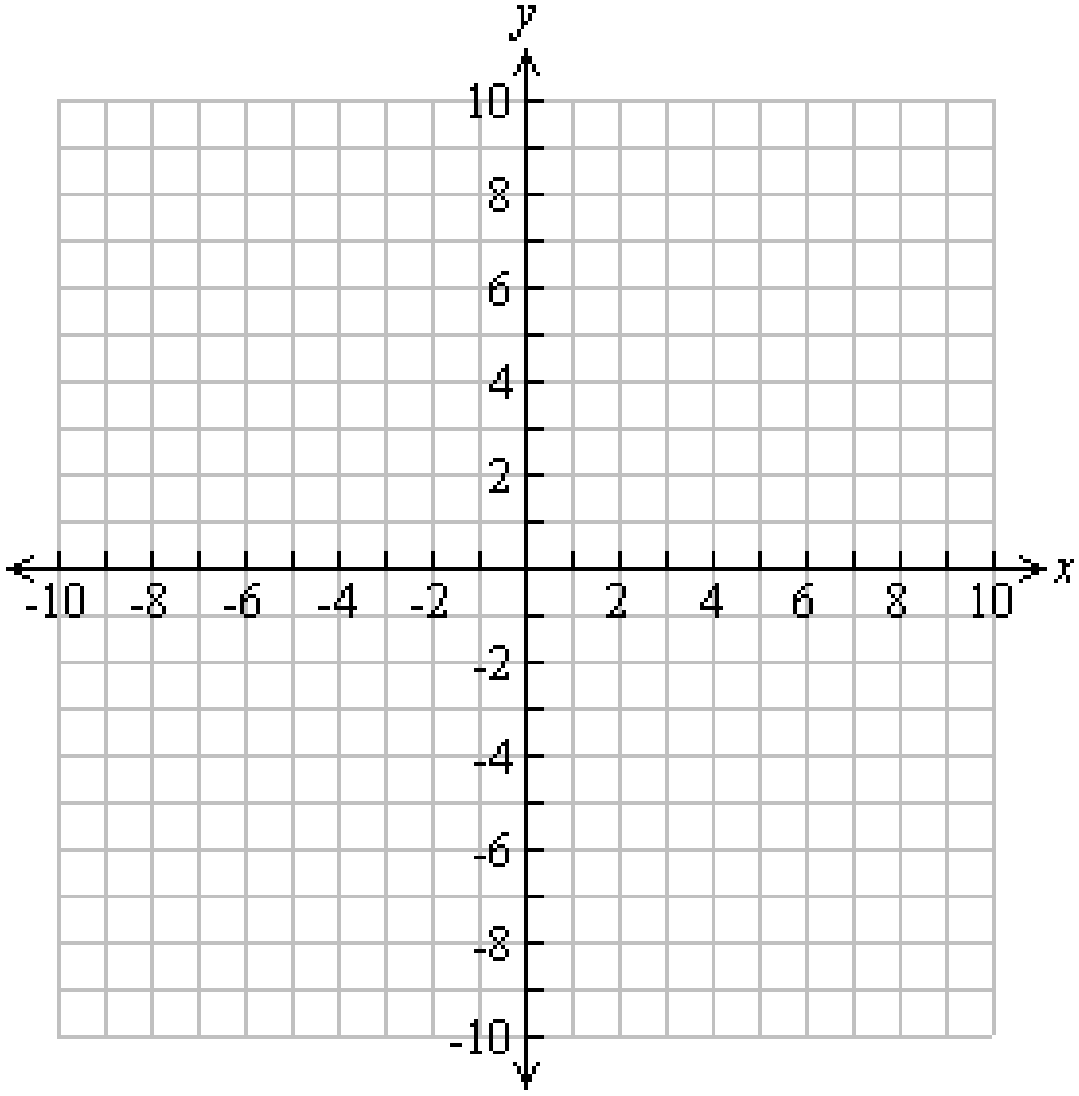
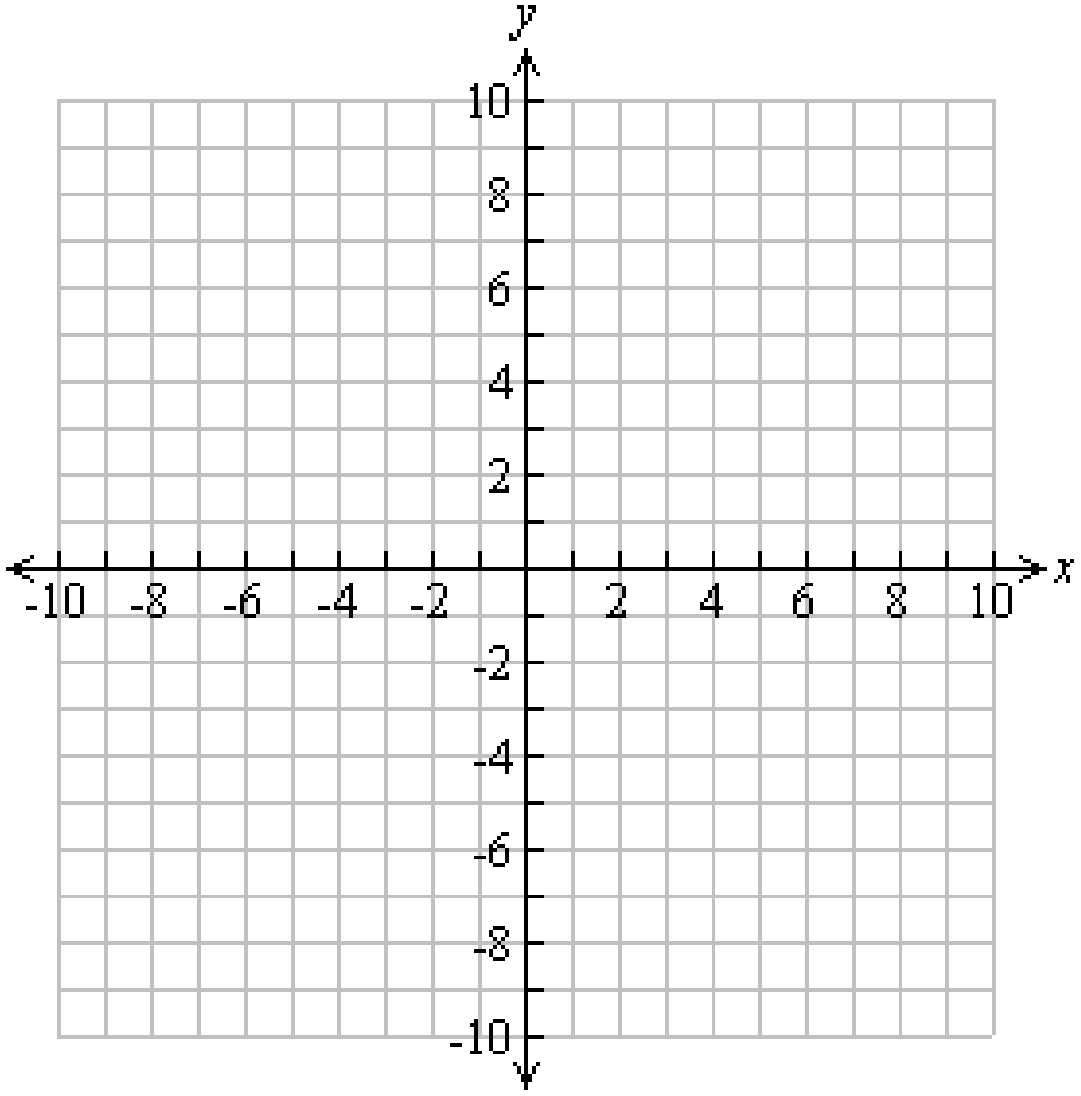
Cartesian Plane Battleship



The Ships:	The length of each ship:
Aircraft Carrier	5
Battleship	4
Destroyer	3
Submarine	3
Patrol Boat	2

Your Hits
X = HITS
O = Miss

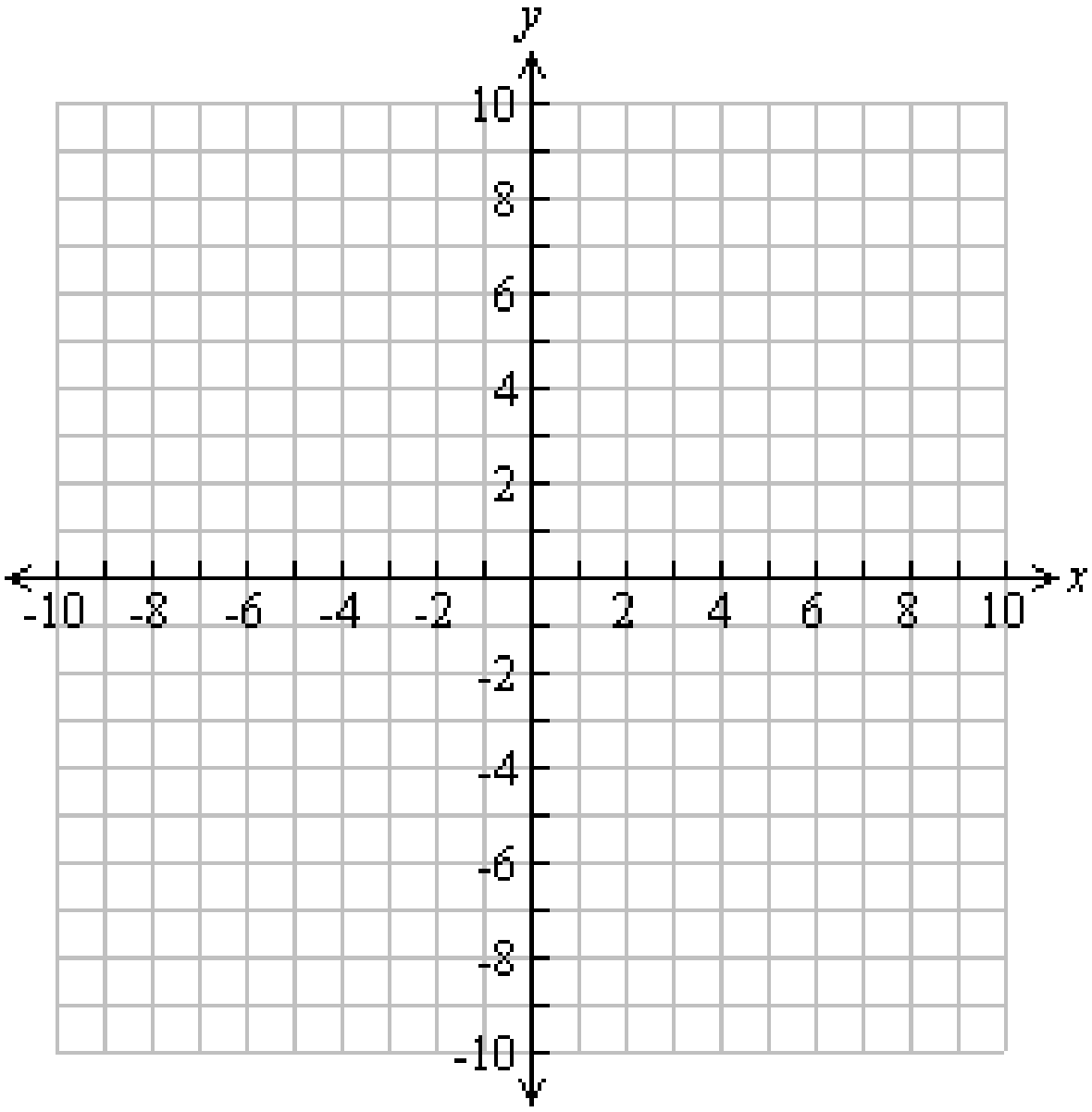
Cartesian Plane Battleship



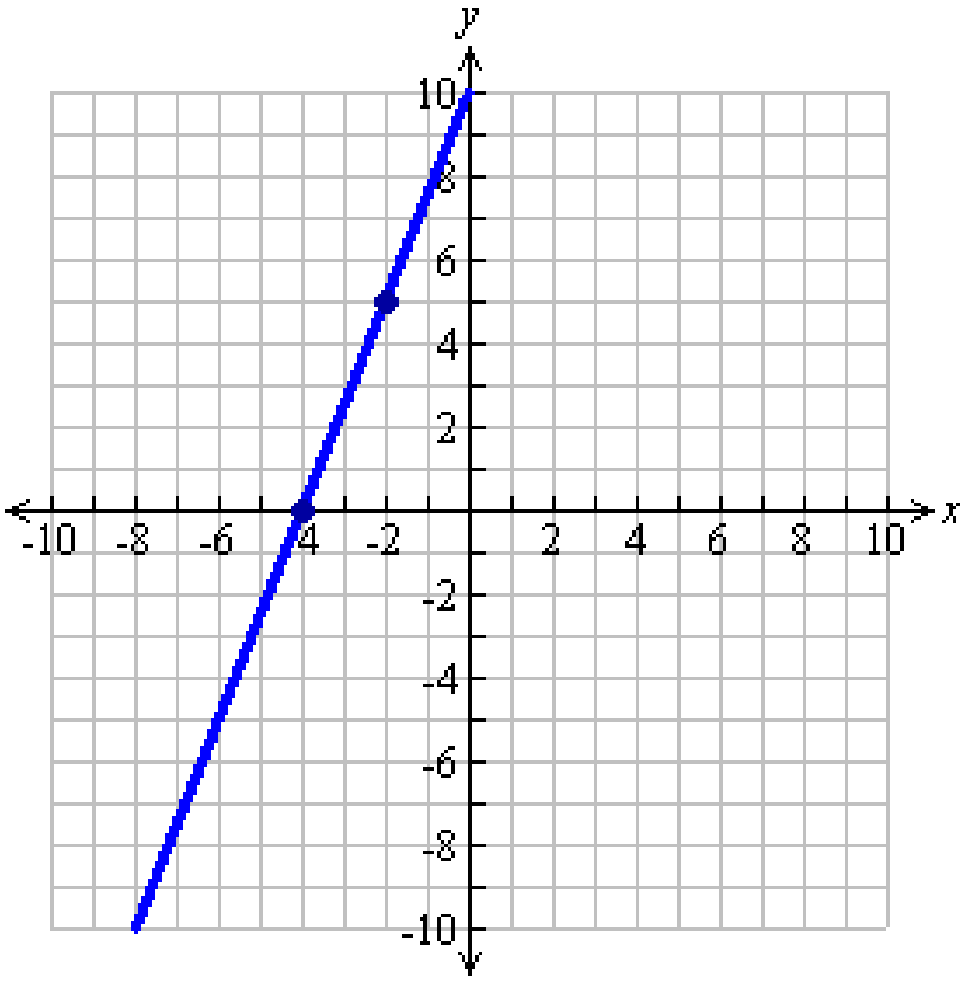
Your Ships:	**Plot and Connect these number of points to make your ships:**
Aircraft Carrier	5
Battleship	4
Destroyer	3
Submarine	3
Patrol Boat	2

Partner's Hits
X = HITS
O = Miss

Coordinate Grid

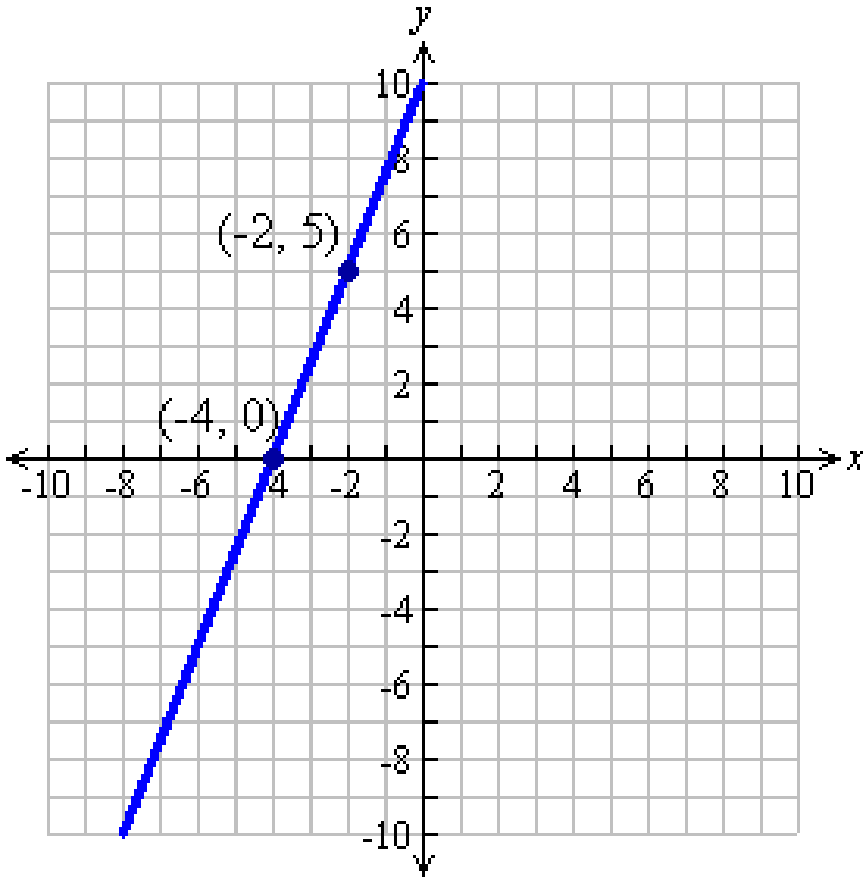


Racing Up and Over the Track



Counting Slope: $\frac{\text{Rise}}{\text{Run}} = \frac{5}{2}$

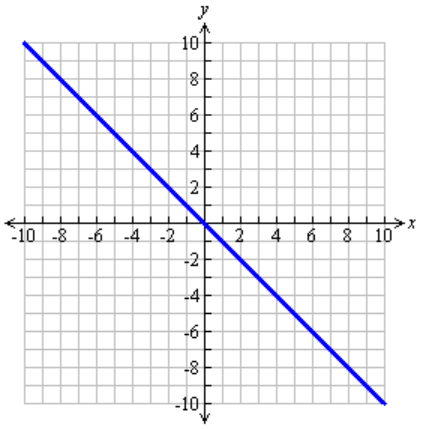
Racing Up and Over the Track

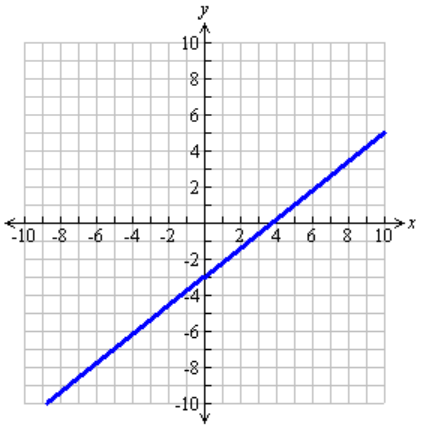


Calculating Slope: $\frac{y_2 - y_1}{x_2 - x_1} = \frac{5-0}{-2-^{-}4} = \frac{5}{2}$

Sloping it Up Name: _____

For exercises 1 – 2, determine the slope of the lines graphed.

1. 

2. 

For exercises 3 – 6, calculate the slope of the line using the given points

3. $(2,-3)$ $(5,8)$

4. $(0,4)$ $(7,-10)$

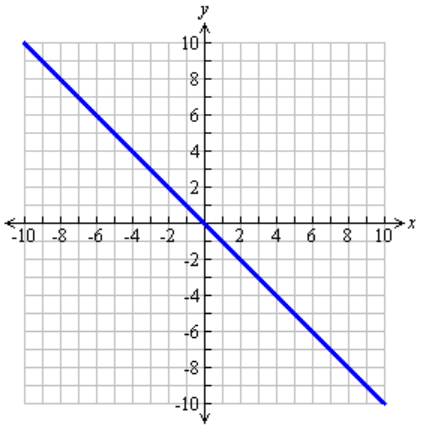
5. $(-2,-9)$ $(6,0)$

6. $(3.5,9)$ $(2.5,8)$

Sloping it Up Name: _ANSWER KEY____

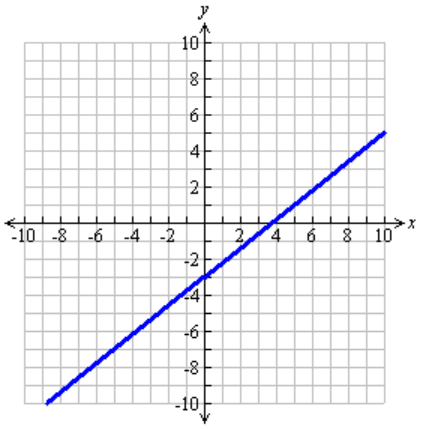
For exercises 1 – 2, determine the slope of the lines graphed.

1.



–1

2.



$\frac{4}{5}$

For exercises 3 – 6, calculate the slope of the line using the given points

3. $(2,-3)$ $(5,8)$

$\frac{11}{3}$

4. $(0,4)$ $(7,-10)$

–2

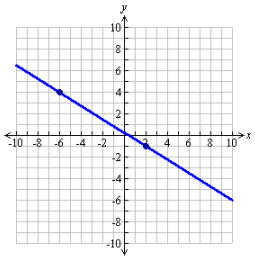
5. $(-2,-9)$ $(6,0)$

$\frac{9}{8}$

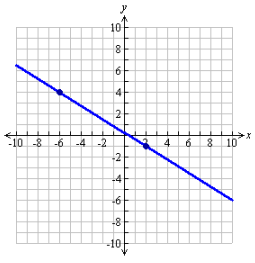
6. $(3.5,9)$ $(2.5,8)$

1

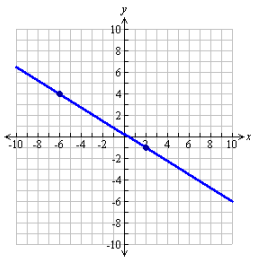
Find Someone Who

Can tell you **The formula for calculating slope** **Name:**	**Can tell you** **The slope of a line which passes through the points:** **(0,4) (2,6)** **Name:**	**Can tell you** **The definition of slope** **Name:**
Can tell you **The four different types of slope** **Name:**	**Can tell you** **The slope of the line:**  **Name:**	**Can tell you** **The value and type of slope of the line which contains the points** **(8,3) (8,–10)** **Name:**

Find Someone Who

Can tell you **The formula for calculating slope** **Name:**	**Can tell you** **The slope of a line which passes through the points:** **(0,4) (2,6)** **Name:**	**Can tell you** **The definition of slope** **Name:**
Can tell you **The four different types of slope** **Name:**	**Can tell you** **The slope of the line:**  **Name:**	**Can tell you** **The value and type of slope of the line which contains the points** **(8,3) (8,–10)** **Name:**

Find Someone Who ANSWER KEY

Can tell you **The formula for calculating slope** $\frac{y_2 - y_1}{x_2 - x_1}$ **Name:**	**Can tell you** **The slope of a line which passes through the points:** **(0,4) (2,6)** Slope = 1 **Name:**	**Can tell you** **The definition of slope** ratio of the altitude change to the horizontal distance between any two points on the line **Name:**
Can tell you **The four different types of slope** Positive, negative, zero, undefined **Name:**	**Can tell you** **The slope of the line:**  **Slope =** $-\frac{5}{8}$ **Name:**	**Can tell you** **The value and type of slope of the line which contains the points** **(8,3) (8,–10)** Undefined **Name:**

Slope in the Real World Name: _____

1. Michael Phelps dives off of a platform and the path of the dive creates a slope of -5 m/s. If the platform is at the coordinate point (0, 10), at what point would he hit the water?

2. Tony Hawk is building a new skate board ramp in his backyard. Beginning at the origin, the base of the ramp is 10 ft. long and it is 15 ft. high. What would be the slope of his ramp?

3. You go on a camping trip with your class and your Algebra teacher gives you directions back to the bus using what you learned about slope.

You are currently standing at point (3,2) You then walk:

- 1.5 units to the right
- 4 units down
- 2 units to the left
- 6 units up
- 7 units to the right

- At what coordinate point would the bus be located?

- What is the slope of the line between your origin and destination?

Slope in the real world Name: __ANSWER KEY___

1. Michael Phelps dives off of a platform and the path of the dive creates a slope of -5 m/s. If the platform is at the coordinate point (0, 10), at what point would he hit the water?

(2, 0)

2. Tony Hawk is building a new skate board ramp in his backyard. Beginning at the origin, the base of the ramp is 10 ft. long and it is 15 ft. high. What would be the slope of his ramp?

$-\frac{3}{2}$

3. You go on a camping trip with your class and your Algebra teacher gives you directions back to the bus using what you learned about slope.

You are currently standing at point (3,2) You then walk:

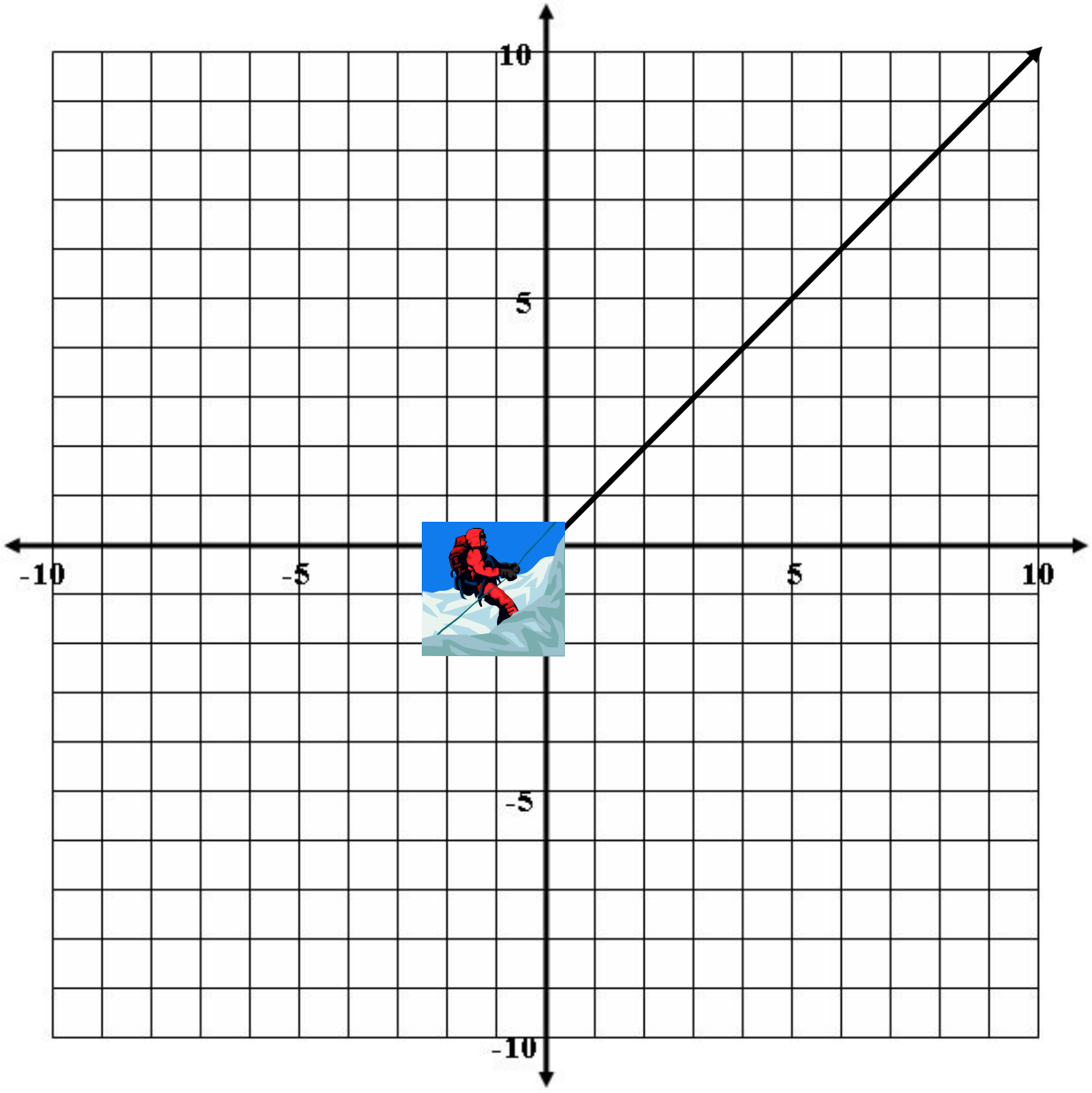
- 1.5 units to the right
- 4 units down
- 2 units to the left
- 6 units up
- 7 units to the right

- At what coordinate point would the bus be located?
  (10, 4)

- What is the slope of the line between your origin and destination?

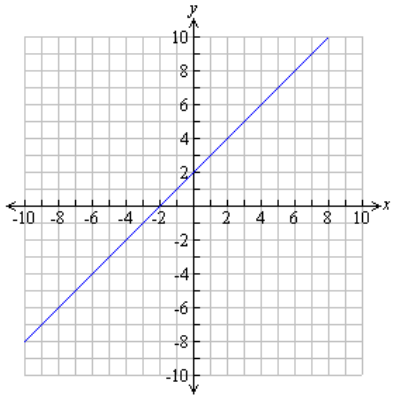
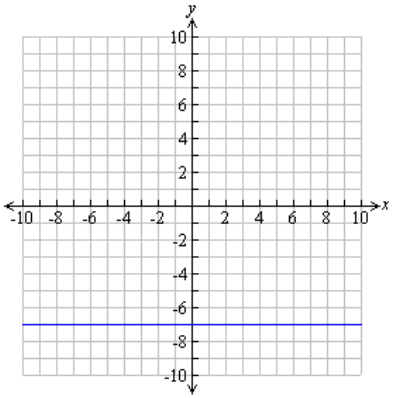
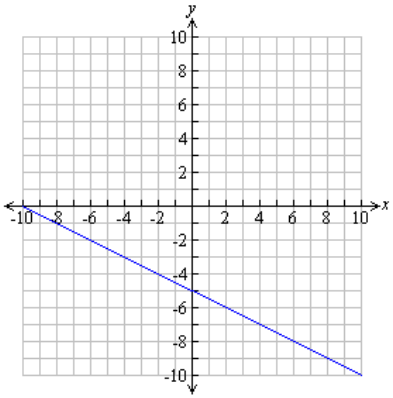
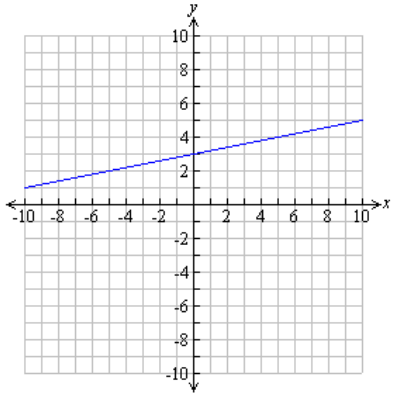
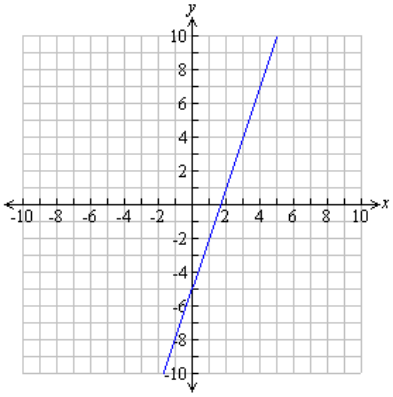
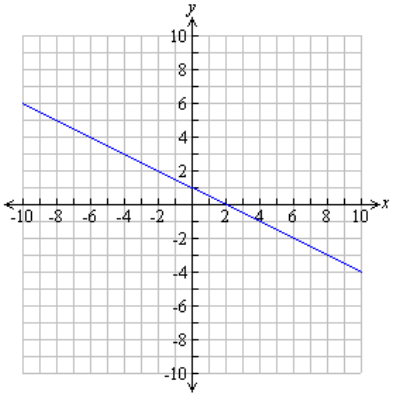
  $\frac{2}{7}$

Mountain Climber



Cut out to move climber up the mountain:

Mountain Climber Cards

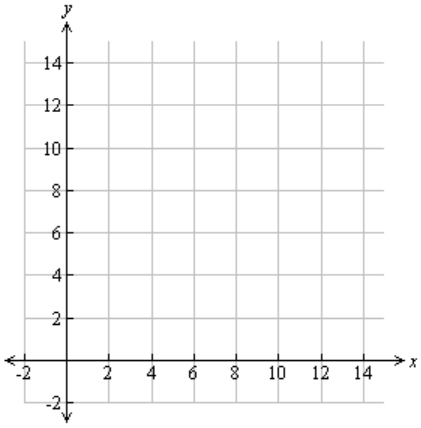
		
Slope = 1, y – intercept = 2	Slope = 0, y – intercept = –7	Slope = $-\frac{1}{2}$, y – intercept = –5
		
Slope = $\frac{1}{5}$, y- intercept = 3	Slope = 3, y- intercept = –5	Slope = $-\frac{1}{2}$, y- intercept = 1

Linear Equations in the Real World Name: _____

1. You and your friends are going to the carnival. There is a $5.00 entrance fee and tickets cost $0.50 each.

   a. What would be the cost for 5 and 10 rides?

   b. Graph the two points from (a), where *y* represents the total cost and *x* represents the number of rides.



   c. Draw a line between the two points.

   d. Determine where the line crosses the *y* – axis.

   e. Find the slope of the line.

   f. Write the equation of the line

2. You buy a cell phone which costs $30, plus an additional $0.30 per minute.

   a. Write an equation to represent this situation.

   b. What is the slope? What does the slope represent I the context of the problem?

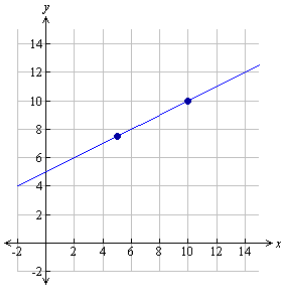
   c. What is the *y*–intercept? What does the *y*–intercept represent in the context of the problem?

Linear Equations in the Real World Name: _ANSWER KEY___

1. You and your friends are going to the carnival. There is a $5.00 entrance fee and tickets cost $0.50 each.

   a. What would be the cost for 5 and 10 rides?
   5 rides = $7.50 10 rides = $10

   b. Graph the two points from (a), where *y* represents the total cost and *x* represents the number of rides.



   c. Draw a line between the two points.

   d. Determine where the line crosses the *y* – axis.
   y – intercept = 5

   e. Find the slope of the line.
   Slope = 0.5

   f. Write the equation of the line
   $y = 0.50x + 5.00$

2. You buy a cell phone which costs $30, plus an additional $0.30 per minute.

   a. Write an equation to represent this situation.
   $y = 0.30x + 30$

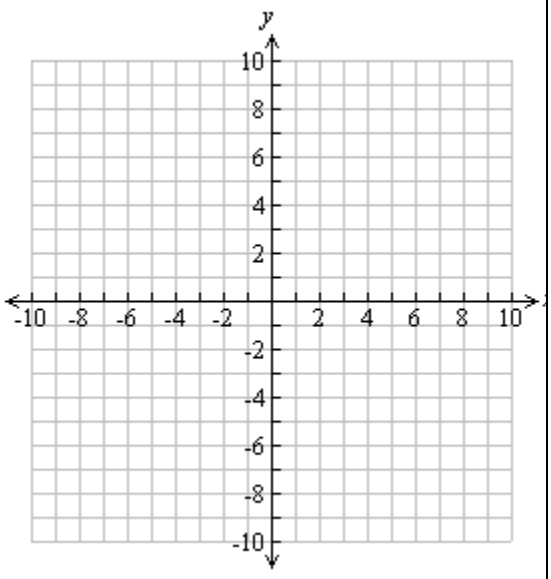
   b. What is the slope? What does the slope represent I the context of the problem?
   The slope is $0.30, which represents the rate of change in the cost of the cell phone per minute purchased.

   c. What is the *y*–intercept? What does the *y*–intercept represent in the context of the problem?
   The *y* – intercept is $30, which represents the initial cost of the phone.

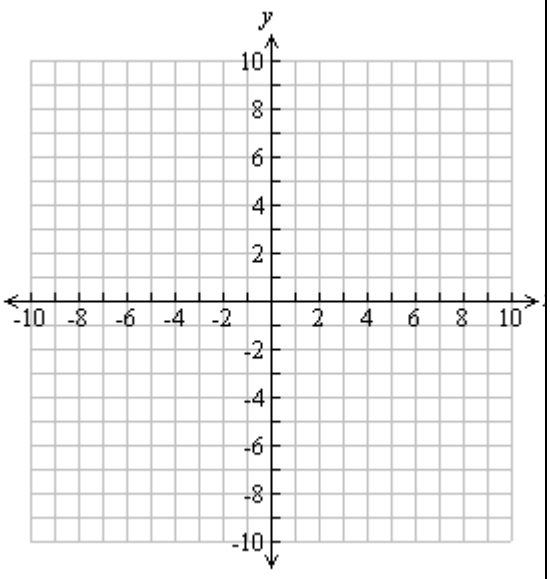
Linear Equations Name: _____
Homework

Directions: Identify the slope and y – intercept from the given equation. Graph the line.

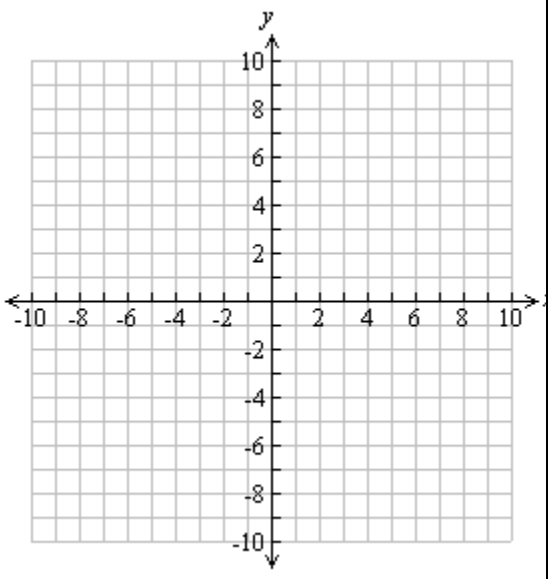
Equation: $y = -2x - 6$
Slope: y – Intercept:



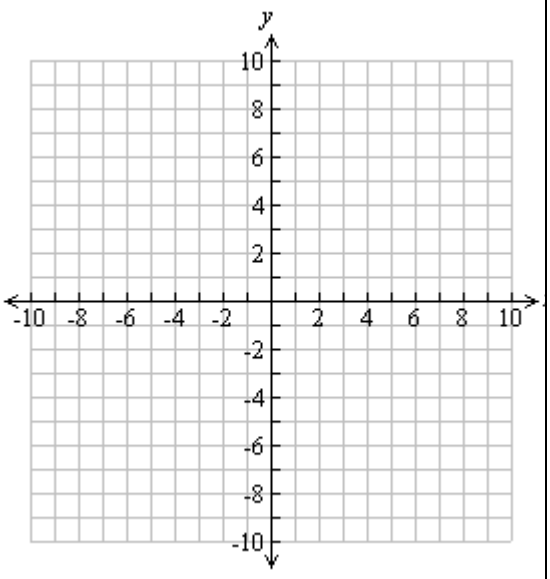
Equation: $y - 4 = x$
Slope: y – Intercept:



Equation: $y = 3x + 5$
Slope: y – Intercept:



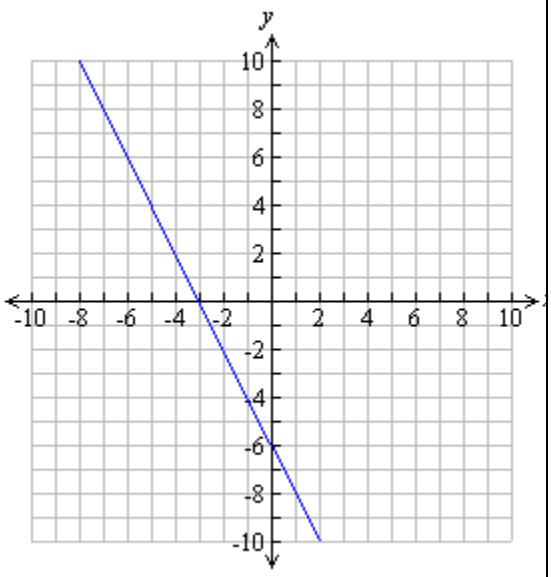
Equation: $y + 8 = -5x$
Slope: y – Intercept:



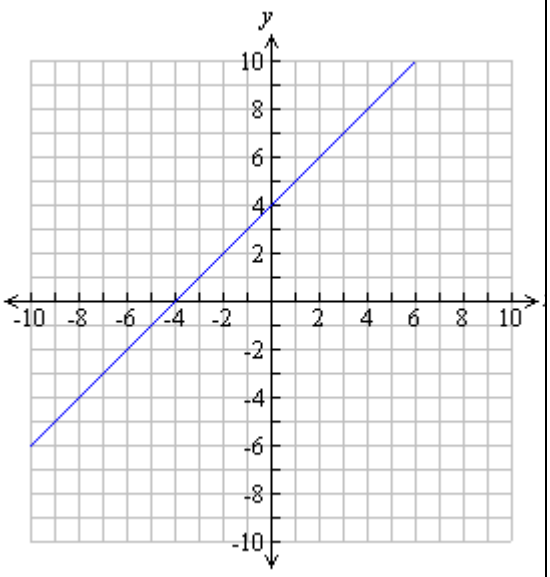
Linear Equations Name: __ANSWER KEY___
Homework

Directions: Identify the slope and y – intercept from the given equation. Graph the line.

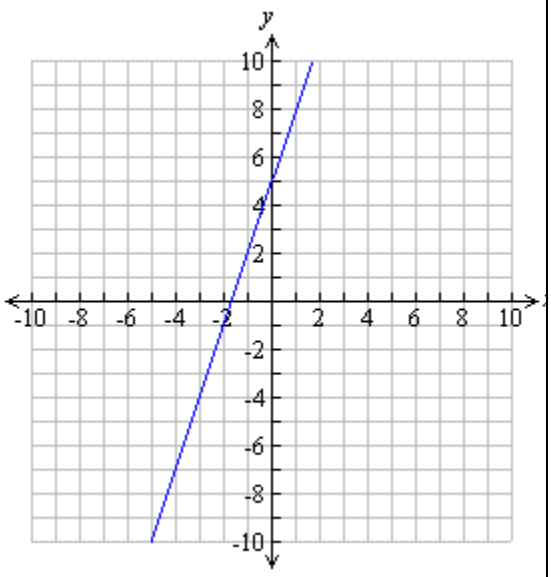
Equation: $y = -2x - 6$
Slope: –2 y – Intercept: –6



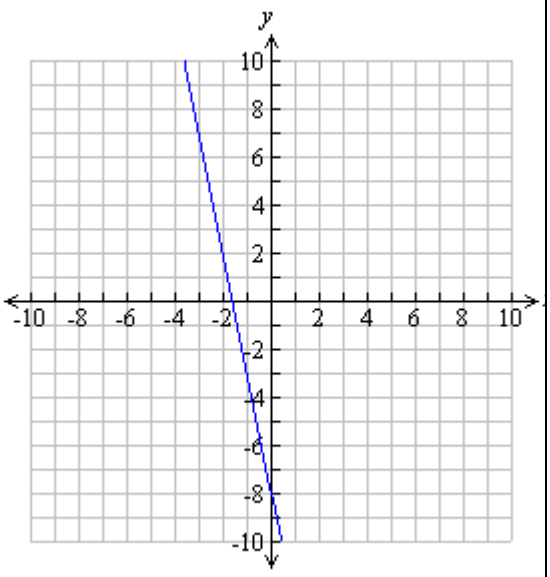
Equation: $y - 4 = x$
Slope: 1 y – Intercept: 4



Equation: $y = 3x + 5$
Slope: 3 y – Intercept: 5



Equation: $y + 8 = -5x$
Slope: –5 y – Intercept: –8



Steps to Write Equations of Lines
Point – Slope Form

$$y - y_1 = m(x - x_1)$$

Step 1: Using the two points given, find the slope of the line.

Step 2: Now that you have the slope, choose one of the points.

- Plug in the slope for the *m*–value.
- Plug in the *x*–value of the point for x_1.
- Plug in the *y*–value in for y_1.

Step 3: Distribute the slope, multiply the slope by *x* and the slope by x_1.

Step 4: Move y_1 to the other side of the equation by adding it if it is negative, or subtracting it if it is positive.

Linear Equations Roundtable

Group Names	
Person 1:	
Person 2:	
Person 3:	
Person 4:	

Given the following points, (0,–8) (4,2), determine the equation of the line and graph it.

Person 1: Calculate the slope

Person 2 check and initial: _____

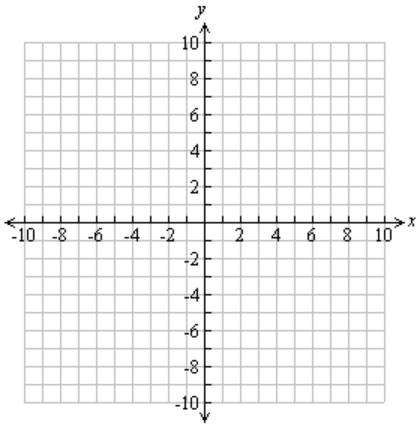
Person 2: Substitute the slope and one point into the slope –intercept equation and calculate the *y*–intercept

Person 3 check and initial: **_____**

Person 3: Write the equation of the line in slope–intercept form.

Person 4 check and initial: _____

Person 4: Graph the line.



Person 1 check and initial: _____

Linear Equations Roundtable

Group Names	
Person 1:	
Person 2:	
Person 3:	
Person 4:	

Given the following points, (5,6) (–3,–4), determine the equation of the line and graph it.

Person 1: Calculate the slope

Person 2 check and initial: _____

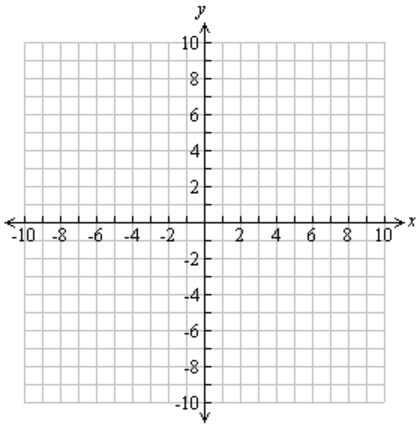
Person 2: Substitute the slope and one point into the slope –intercept equation and calculate the *y*–intercept

Person 3 check and initial: **_____**

Person 3: Write the equation of the line in slope–intercept form.

Person 4 check and initial: _____

Person 4: Graph the line.



Person 1 check and initial: _____

Linear Equations Roundtable

Group Names	
Person 1:	
Person 2:	
Person 3:	
Person 4:	

Given the following points, $\left(\frac{1}{2},\frac{3}{2}\right)$ $\left(\frac{3}{4},-\frac{5}{4}\right)$, determine the equation of the line and graph it.

Person 1: Calculate the slope

Person 2 check and initial: _____

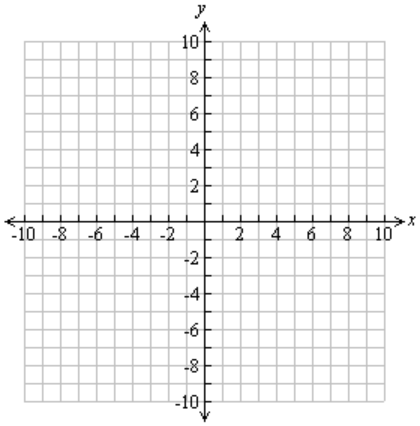
Person 2: Substitute the slope and one point into the slope –intercept equation and calculate the *y*–intercept

Person 3 check and initial: **_____**

Person 3: Write the equation of the line in slope–intercept form.

Person 4 check and initial: _____

Person 4: Graph the line.



Person 1 check and initial: _____

Linear Equations Roundtable

Group Names	
Person 1:	
Person 2:	
Person 3:	
Person 4:	

Given the following points, (–2,–4) (0, –8), determine the equation of the line and graph it.

Person 1: Calculate the slope

Person 2 check and initial: _____

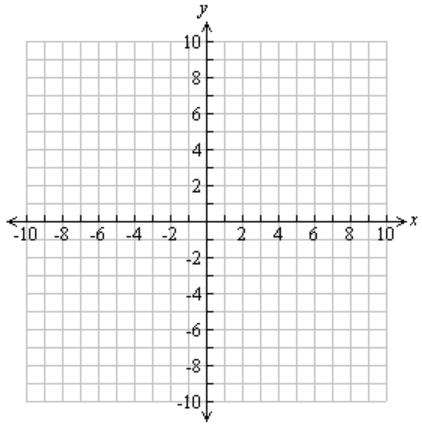
Person 2: Substitute the slope and one point into the slope –intercept equation and calculate the *y*–intercept

Person 3 check and initial: **_____**

Person 3: Write the equation of the line in slope–intercept form.

Person 4 check and initial: _____

Person 4: Graph the line.



Person 1 check and initial: _____

Linear Equations Roundtable

Group Names	
Person 1:	ANSWER KEY
Person 2:	
Person 3:	
Person 4:	

Given the following points, (0,–8) (4,2), determine the equation of the line and graph it.

Person 1: Calculate the slope

$\frac{5}{2}$

Person 2 check and initial: _____

Person 2: Substitute the slope and one point into the slope –intercept equation and calculate the *y*–intercept

–8

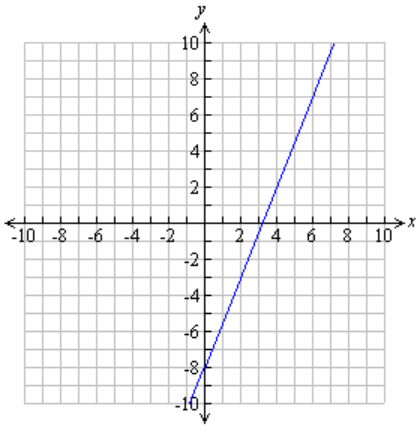
Person 3 check and initial: **_____**

Person 3: Write the equation of the line in slope–intercept form.

$y = \frac{5}{2}x - 8$

Person 4 check and initial: _____

Person 4: Graph the line.



Person 1 check and initial: _____

Linear Equations Roundtable

Group Names	
Person 1:	ANSWER KEY
Person 2:	
Person 3:	
Person 4:	

Given the following points, (5,6) (–3,–4), determine the equation of the line and graph it.

Person 1: Calculate the slope

$\frac{5}{4}$

Person 2 check and initial: _____

Person 2: Substitute the slope and one point into the slope –intercept equation and calculate the *y*–intercept

$-\frac{1}{4}$

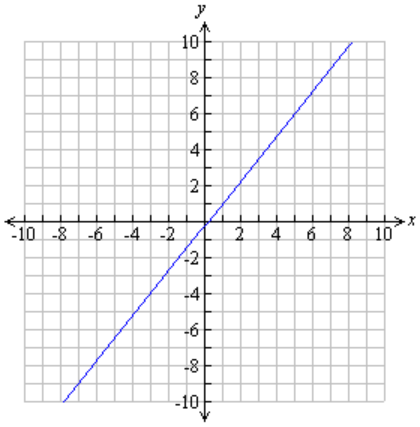
Person 3 check and initial: **_____**

Person 3: Write the equation of the line in slope–intercept form.

$y = \frac{5}{4}x - \frac{1}{4}$

Person 4 check and initial: _____

Person 4: Graph the line.



Person 1 check and initial: _____

Linear Equations Roundtable

Group Names	
Person 1:	ANSWER KEY
Person 2:	
Person 3:	
Person 4:	

Given the following points, $\left(\frac{1}{2},\frac{3}{2}\right)$ $\left(\frac{3}{4},-\frac{5}{4}\right)$, determine the equation of the line and graph it.

Person 1: Calculate the slope

–11

Person 2 check and initial: _____

Person 2: Substitute the slope and one point into the slope –intercept equation and calculate the *y*–intercept

7

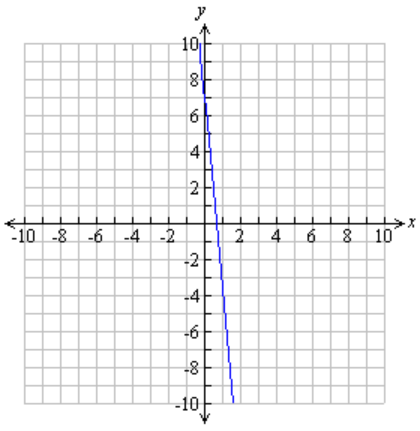
Person 3 check and initial: _____

Person 3: Write the equation of the line in slope–intercept form.

$y = -11x + 7$

Person 4 check and initial: _____

Person 4: Graph the line.



Person 1 check and initial: _____

Linear Equations Roundtable

Group Names	
Person 1:	ANSWER KEY
Person 2:	
Person 3:	
Person 4:	

Given the following points, (–2,–4) (0, –8), determine the equation of the line and graph it.

Person 1: Calculate the slope

–2

Person 2 check and initial: _____

Person 2: Substitute the slope and one point into the slope –intercept equation and calculate the *y*–intercept

–8

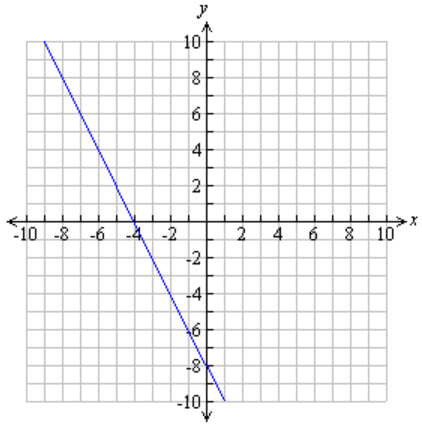
Person 3 check and initial: **_____**

Person 3: Write the equation of the line in slope–intercept form.

$y = -2x - 8$

Person 4 check and initial: _____

Person 4: Graph the line.



Person 1 check and initial: _____

Converting Equations from Standard Form to Slope-Intercept Form

$$5x - 3y = 6$$
$$\underline{-5x \qquad -5x}$$

$$\frac{-3y}{-3} = \frac{6 - 5x}{-3}$$

$$y = -2 + 5/3x$$

Class Examples:

1. $2x + y = -4$

2. $3x + 4y = 12$

Converting from point-slope form to slope – intercept form

$$y + 6 = 2(x-2)$$

$$y + 6 = 2x - 4$$
$$-6 \qquad -6$$

$$y = 2x - 10$$

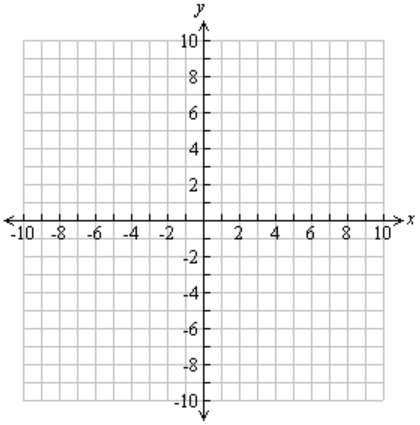
Class examples

1. $y - 3 = 2.5(x+1)$

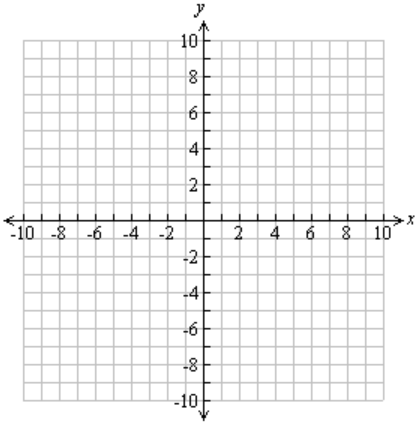
2. $y - 5 = 4(x+2)$

Graph the line given the following information:

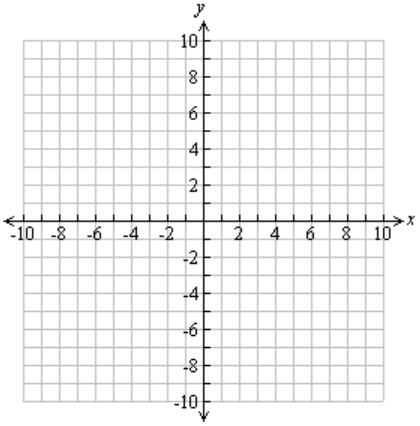
y = 2x – 3



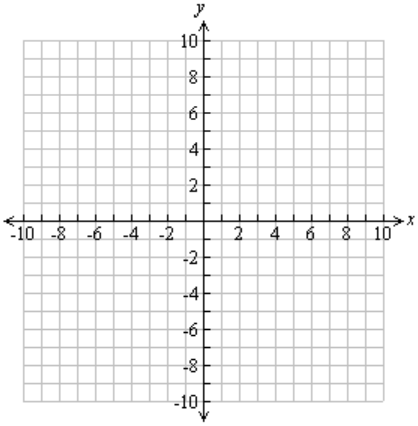
y = - 3x + 1



slope = 2, y intercept = -6

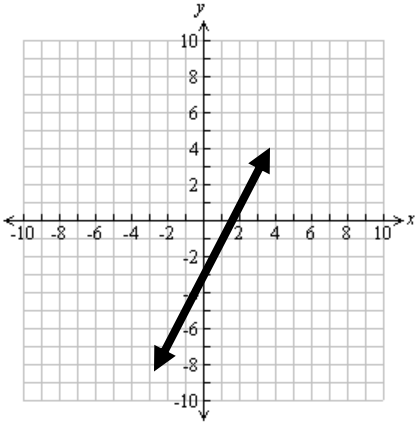


slope = -3/5, passes through the point (2, -1)

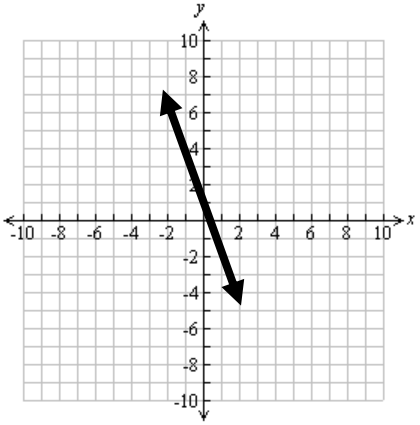


Graph the line given the following information: (Answer Key)

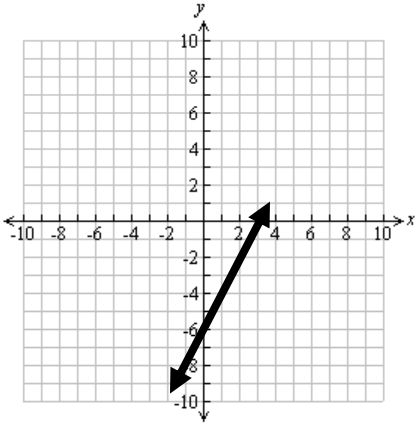
y = 2x – 3



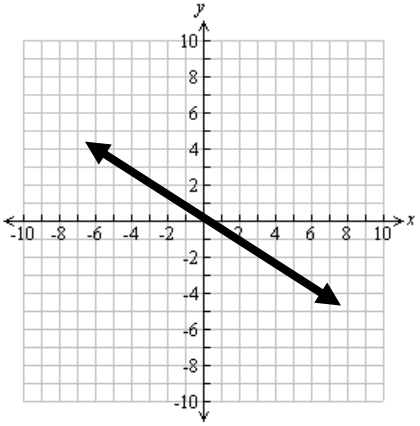
y = - 3x + 1



slope = 2, y intercept = -6

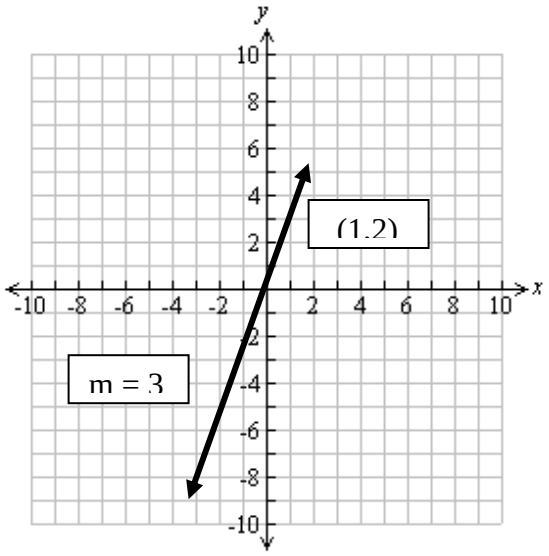


slope = -3/5, passes through the point (2, -1)

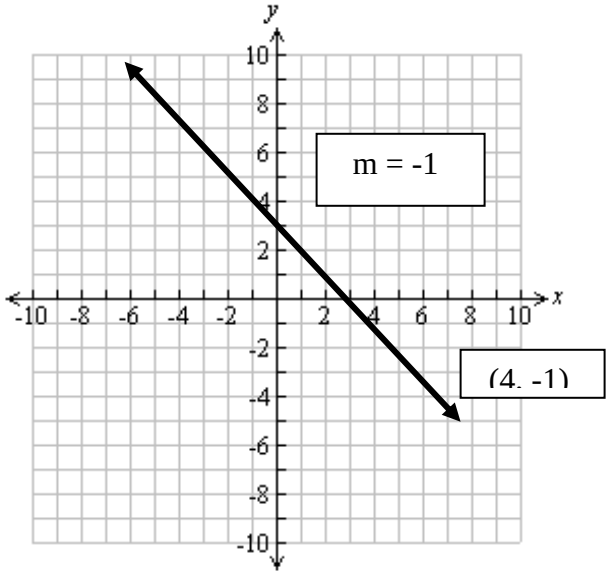


Write the Equation for the Line

1.



2.

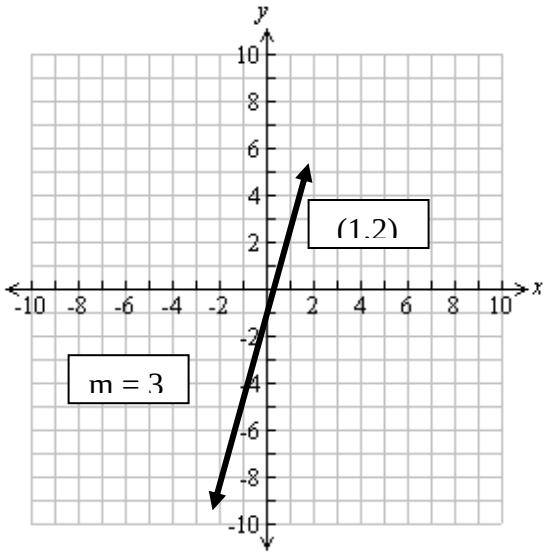


3. A horizontal line going through the point (2, 2).

4. A vertical line going through the point (3, 2).

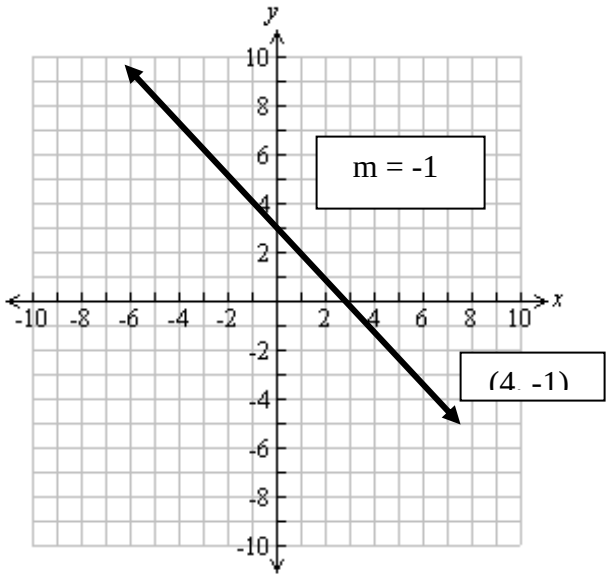
Write the Equation for the Line

1.



y = 3x - 1

2.



y = -x + 3

Answer Key

3. A horizontal line going through the point (2, 2).

y = 2

4. A vertical line going through the point (3, 2). **x = 3**